

Work Order ID 69709

Tuesday, May 17, 2011 2:25:50 PM



Page 1

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube RH

Start Date: 5/17/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 6/2/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

[Signature]

Date: 11-5-17

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2750

F

D3492

C

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-012 CHG 006

8/6/07/13

9/11/13 CL 11-7-13

B69709

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-2 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail K)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail L to 0.500" (8 holes per side)

9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

JB

11/06/15

W/O:		WORK ORDER CHANGES					
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Customer:

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left
from bending as per QSI 004

A/R Aluminum Rod batch: M117456

BE 11/06/15
BB 11/06/17

12-Grind welds flush as per Dwg D2750

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

Suldoe

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Suldoe

(70)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Customer:

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

*11.06.21**1 0*

150

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 0 BE 11/06/21

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail L and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.

2-Open up holes of Detail K to 0.750" (total of 4 holes per side) as per dwg D2750.

3-Open float holes to .500" (4 per Side)

4-Chamfer holes of Detail K, L, ground handling and float holes per dwg D2750 (welding instructions on sheet 9)

5-Deburr and blow out all chips from inside of tube

6-Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI015

A/R ☒ Sikaflex-291 batch: 116845 ☐ ☐ ☐
exp. date: 12/01/15

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 9)

A/R ☐ Aluminum Rod batch: M117456

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

11-Spot face ground handling holes section (total of 4 places per side) as per

1

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

dwg D2750

12-Deburr holes

3 DE-11/06/27

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

8/16/27

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8/16/27

D

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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 0 BL 11-7-6

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

200 320 2:30

1 0 M/L 4/07/07

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

1 0 11/07/12

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

✓ Install inserts as per dwg D2750

1 0 11/07/11

230

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

✓ 1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3"

batch: N/A

3-Install blade fitting D3488-042, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: 11117516EXP DATE: 05/01

4-assemble o-ring to plug as per dwg D3492 and apply o-ring lube

A/R 55-o-ring lube batch: 1111486

5-Coat all exposed fasteners with "LPS Procyon"

batch: 111145961 0 11/07/11

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8/16/12

FC

250



Packaging

Packaging

Pick Kit

0.00

Memo

0.00

11/17/13

260



QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

Memo

0.00

8/16/13

FC

W/O:		WORK ORDER CHANGES					
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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

0.00



Packaging

Packaging

Memo

0.00

Packaging

Package as per PPP D350-636-012

*MS**Page 13*

280

0.00



QC21- Final Inspection - Work Order Release

QC

Memo

0.00

Quality Control

*W7/14**MF**11-07-14*

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Picklist Print

Tuesday, May 17, 2011 2:25:56 PM

Page 1

Work Order ID: 69709

Parent Item: D350-636-012

Parent Item Name: Skidtube RH



Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-29 As per Rev D EC
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By: EC
 IPP Rev: M 08-04-22 update steps 4,13 DD verified by: ec
 IPP Rev: N 08-09-23 revF as per dwg DD verified by: ec IPP Rev: O
 10.06.22 revise seq110 DD verf: EC IPP Rev: P 10.10.01 as per
 IIN revH DD verf: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

ALS4-1032-225		Purchased	No			220	Each	1,685.000	38	38			

Insert

Location	Loc Qty	Loc Code
FP-B	4	
110768	4	
ST282	1681	
110768	881	
117717	800	

38 11/07/12

AN3C5A		Purchased	No			230	Each	1,290.000	34	34			

Bolt

Location	Loc Qty	Loc Code
FP-A	7	
115835	7	
ST350	1283	
115422	49	
116419	334	
116549	100	
117343	500	
117508	300	

278872

34 11/07/12

x34

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Parent Item Name: Skidtube RH

Start Date: 5/17/2011

Required Date: 6/2/2011


Start Qty: 1.00

Required Qty: 1.00

AN3C6A

 BOLT

Purchased No 230 Each 422.0000 4 4

 u 11/07/12


Location	Loc Qty	Loc Code
FP-A	1	
111982	1	
ST351	421	
111982	2	
116419	23	
116549	50	
116704	96	
117514	100	
117619	50	
<u>117688</u>	100	

X4

AN6C44A

 BOLT

Purchased No 230 Each 82.0000 4 4

 u 11/07/12

Location	Loc Qty	Loc Code
FG	2	
103964	2	1117763
ST344	80	
117407	80	

X4

AN8C35A

 BOLT

Purchased No 230 Each 69.0000 1 1

 u 11/07/12

Location	Loc Qty	Loc Code
FP	40	
117511	40	
FP-A	29	
115960	6	
<u>116874</u>	23	

X1

Tuesday, May 17, 2011 2:25:57 PM

Shop Packet Print

Page 2

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Parent Item Name: Skidtube RH

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Start Qty: 1.00

Required Qty: 1.00

AN960C10L NAS1149C0332 Purchased No

230 Each 0.0000 38 38



washer

M1118179



(x38) JH 11/07/12

AN960C816L Purchased No

230 Each 0.0000 1 1



WASHER NAS1149C0832R / M1114915



(x1) JH 11/07/12

D2745 Manufactured No

230 Each 206.0000 8 8



Bushing



JH 11/07/12

Location

Loc Qty

Loc Code

FP-A

206

67764

5

68248

201

x8

D3488-042 Manufactured No

230 Each 24.0000 1 1



JH 11/07/12

Blade Fitting Assembly, RH

Location

Loc Qty

Loc Code

FP008

24

62003

4

65099

8

68109

12

x1

D3492-1 Manufactured No

230 Each 0.0000 8 8



870689



(x8) JH 11/07/12

Plug

D3492-3 Manufactured No

230 Each 0.0000 8 8



1370692



(x8) JH 11/07/12

Plug

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Parent Item Name: Skidtube RH

Start Date: 5/17/2011



Required Date: 6/2/2011

Start Qty: 1.00



Required Qty: 1.00

D3535-25 Manufactured No 230 Each 30.0000 1 1
  HL 11/07/12
Wearshoe



Location	Loc Qty	Loc Code
FP018	30	
62233	1	
65167	3	
68353	11	
69284	15	

D3536-25 Manufactured No 230 Each 34.0000 1 1
  HL 11/07/12
Gasket

Location	Loc Qty	Loc Code
FP012	34	
65903	8	
68351	26	

D3537-1 Manufactured No 230 Each 35.0000 3 3
  HL 11/07/12
Wearpad

Location	Loc Qty	Loc Code
FP017	35	
63313	2	B70686
66804	29	
66935	4	

D3631-1 Manufactured No 230 Each 500.0000 8 8
  HL 11/07/12
Washer

Location	Loc Qty	Loc Code
ST072	500	
68062	500	

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Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, May 17, 2011 2:25:57 PM

Work Order ID: 69709

Parent Item: D350-636-012



Parent Item Name: Skidtube RH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D3672-1	Manufactured	No	230	Each	1,350.000	8	8
							94 11/07/12 PTO =>
Phenolic Washer							

Location

Loc Qty

Loc Code

ST074

1350

~~1369744~~



xl

64177

850

66821

500

D3791-1	Manufactured	No	230	Each	19.0000	1	1
							94 11/07/12
Wearplate							

Location

Loc Qty

Loc Code

FP017

19

1369744



xl

62239

7

68352

12

D3793-1	Manufactured	No	230	Each	31.0000	1	1
							94 11/07/12
Wearshoe							

Location

Loc Qty

Loc Code

FP018

31



64445

14

69285

17

xl

D3793-3	Manufactured	No	230	Each	30.0000	1	1
							94 11/07/12
Wearshoe							

Location

Loc Qty

Loc Code

FP018

21

68356

13

69283

8

FP019

9

64447

9

W/O: 69709		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11/07/12	230	Replace with NAS1515 H3L / M113362 washers perm. chg @	JH R	11/07/12 11-07-12	✓ 1	N/A	S 11/9/12

Part No: D350-636-012 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, May 17, 2011 2:25:58 PM

Page 6

Work Order ID: 69709

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D3794-1

Manufactured No

230 Each

32.0000 1 1



Gasket



Handwritten: 11/07/12

Location

Loc Qty

Loc Code

FP010

32

39421

1

61704

5

68355

26

D3794-3

Manufactured No

230 Each

34.0000 1 1



Gasket



Handwritten: 11/07/12

Location

Loc Qty

Loc Code

FP010

26

68357

26

FP018

8

39422

1

61712

7

MS21043-6

Purchased No

230 Each

523.0000 4 4



NUT



Handwritten: 11/07/12

Location

Loc Qty

Loc Code

FG

20

103693

20

FP-A

40

112314

40

ST301

463

112314

463

Handwritten: 44

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, May 17, 2011 2:25:58 PM

Page 7

Work Order ID: 69709

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

230

Each

113.0000

1

1



NUT



Handwritten: 1107112

Location

Loc Qty

Loc Code

FP-B

1

115884

1

ST303

112

115884

0

117291

37

117423

50

117677

25

Handwritten: x1

NAS1611-010

Purchased

No

230

Each

266.0000

8

8



O-RING



Handwritten: 1107112

Location

Loc Qty

Loc Code

FP

80

117460

80

FP-A

186

110915

139

115589

47

Handwritten: 1118077

Handwritten: x3

NAS1611-013

Purchased

No

230

Each

168.0000

8

8



O-RING



Handwritten: 1107112

Location

Loc Qty

Loc Code

FP

163

117291

123

117460

40

FP-A

5

116582

5

Handwritten: x3

Tuesday, May 17, 2011 2:25:58 PM

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Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Tuesday, May 17, 2011 2:25:58 PM

Page 8

Work Order ID: 69709

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

AN8C21A

Purchased

No

250

Each

76.0000

2

2



BOLT

Location

Loc Qty

Loc Code

ST345

76

116381

26

117562

50

AN960JD816

Purchased

No

250

Each

43.0000

2

2



1/2" washer, Alum

NA9149D08632

Location

Loc Qty

Loc Code

FP-A

43

106043

43

D2741

Manufactured

No

250

Each

44.0000

1

1



Blade, 350 Skidtube

Location

Loc Qty

Loc Code

ST466

44

61341

6

63589

38

D3493-1

Manufactured

No

250

Each

31.0000

2

2



Washer

Location

Loc Qty

Loc Code

ST062

31

66975

31

Tuesday, May 17, 2011 2:25:59 PM

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Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, May 17, 2011 2:25:59 PM

Work Order ID: 69709

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D3532-1

Manufactured No

250 Each

13.0000

2 2

Spacer

Location

Loc Qty

Loc Code

ST065

13

62218

13

Purchased No

250 Each

113.0000

2 2

MS21083C8

NUT

Location

Loc Qty

Loc Code

FP-B

1

115884

1

ST303

112

115884

0

117291

37

117423

50

117677

25

D2600-3-BENT

Manufactured No

110 Each

14.0000

1 1

Extrusion Bent

Location

Loc Qty

Loc Code

LG

14

66875

8

68137

6

D2744

Manufactured No

110 Each

31.0000

1 1

Cap

Location

Loc Qty

Loc Code

LG002

31

62715

3

65086

28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 10

Tuesday, May 17, 2011 2:25:59 PM

Work Order ID: 69709

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D2739

Manufactured No

160

Each

6.0000

1



350 I Beam

69886



1

B

11/06/21

Location

Loc Qty

Loc Code

LG

6

67785

1

68285

5

D2743

Manufactured No

160

Each

139.0000

8



Crossbolt Spacer



8

B 6811/06/22
B 69818 *B

Location

Loc Qty

Loc Code

LG001

139

67766

75

68251

64

D3490-3

Manufactured No

160

Each

42.0000

4



Cross Bolt Spacer



4

B 6811/06/22
B 68952 *4

Location

Loc Qty

Loc Code

LG

26

68106

26

LG001

16

67774

16

D3490-1

Manufactured No

160

Each

69.0000

4



Cross Bolt Spacer



4

B 6811/06/22
B 69510 *4

Location

Loc Qty

Loc Code

LG

67

67773

11

68105

56

LG001

2

62450

2

Tuesday, May 17, 2011 2:25:59 PM

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Page 10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 69709

11-05-17

RELEASED

F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741; QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEC 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.07.16		

DART AEROSPACE USA, INC.
PORT HADLOCK, WA

DRAWING NO. D2750
REV. F
SHEET 1 OF 11

TITLE
350 SKIDTUBE ASSEMBLY
SCALE
NTS

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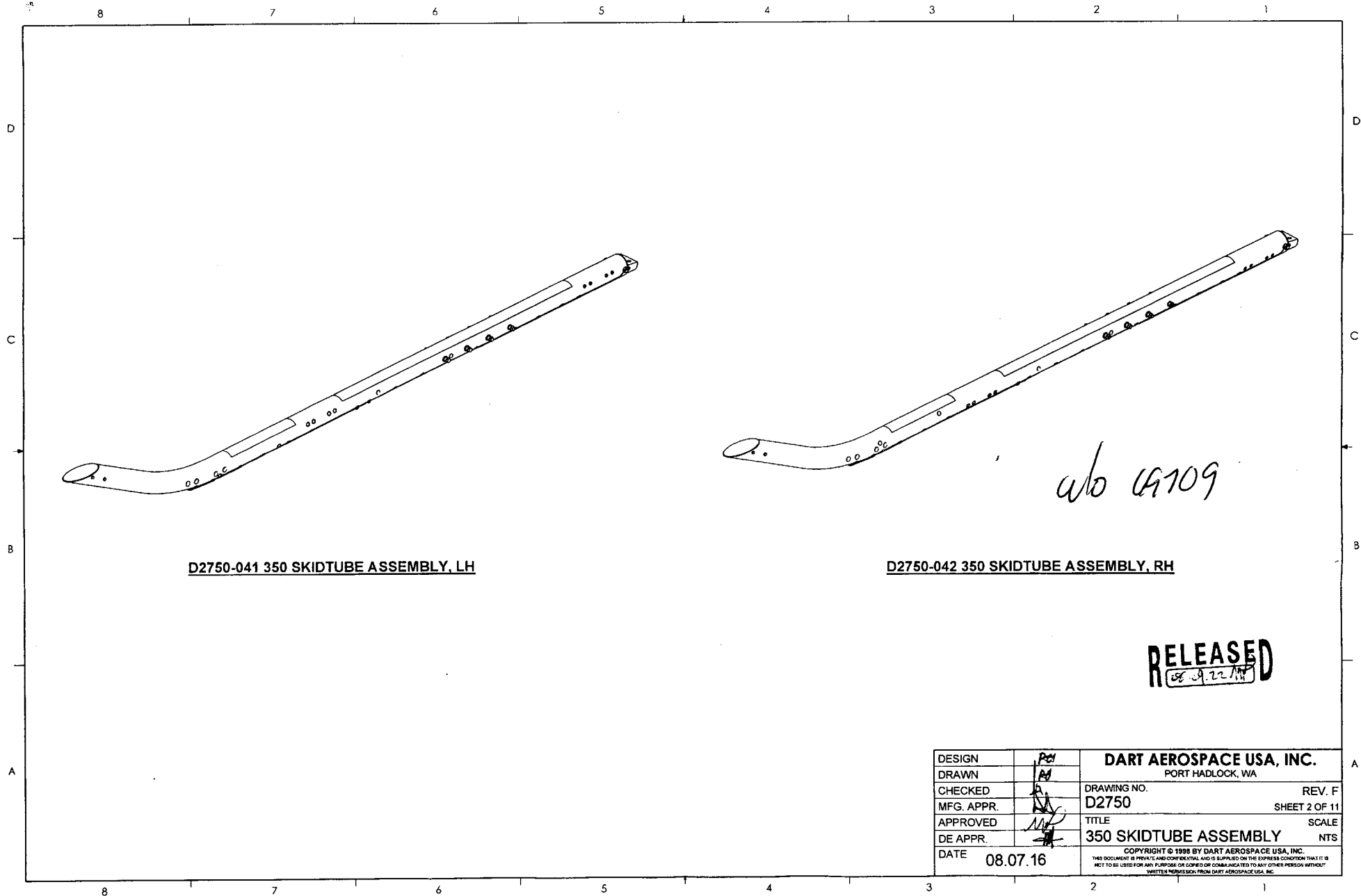
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



u/b 6109

RELEASED
 08.07.16

DESIGN	<i>PCN</i>	DART AEROSPACE USA, INC.	
DRAWN	<i>AM</i>	PORT HADLOCK, WA	
CHECKED	<i>JA</i>	DRAWING NO. D2750	REV. F
MFG. APPR.	<i>MA</i>	SHEET 2 OF 11	
APPROVED	<i>MA</i>	TITLE	SCALE
DE APPR.	<i>MA</i>	350 SKIDTUBE ASSEMBLY	NTS
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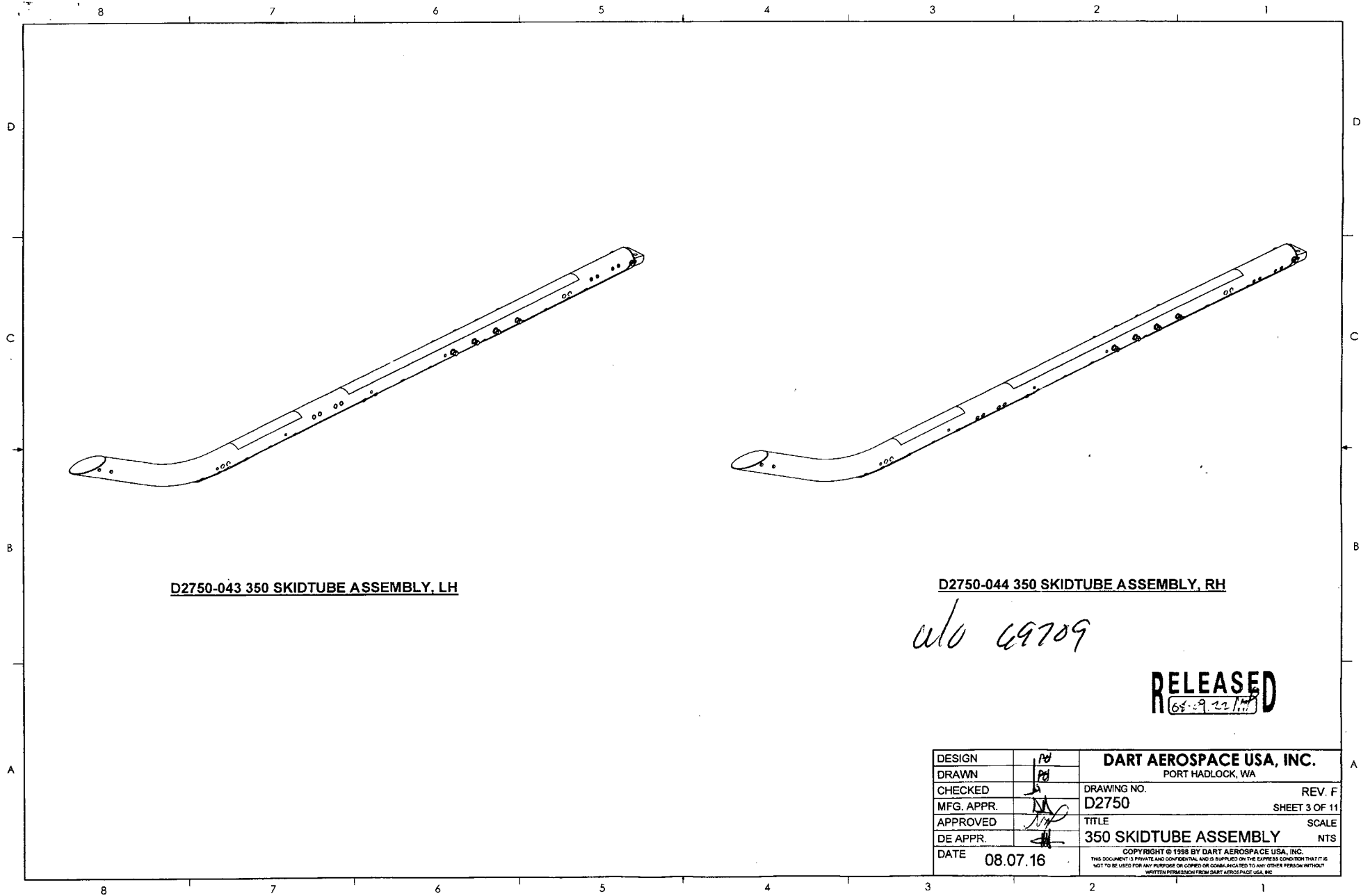
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2750-043 350 SKIDTUBE ASSEMBLY, LH

D2750-044 350 SKIDTUBE ASSEMBLY, RH

alo 69709

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68-09-22/100

DESIGN	PW	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	PW		
CHECKED	MA	DRAWING NO. D2750	REV. F
MFG. APPR.	MA	SHEET 3 OF 11	
APPROVED	MA	TITLE 350 SKIDTUBE ASSEMBLY	SCALE NTS
DE APPR.	MA	COPYRIGHT © 1988 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	
DATE	08.07.16		

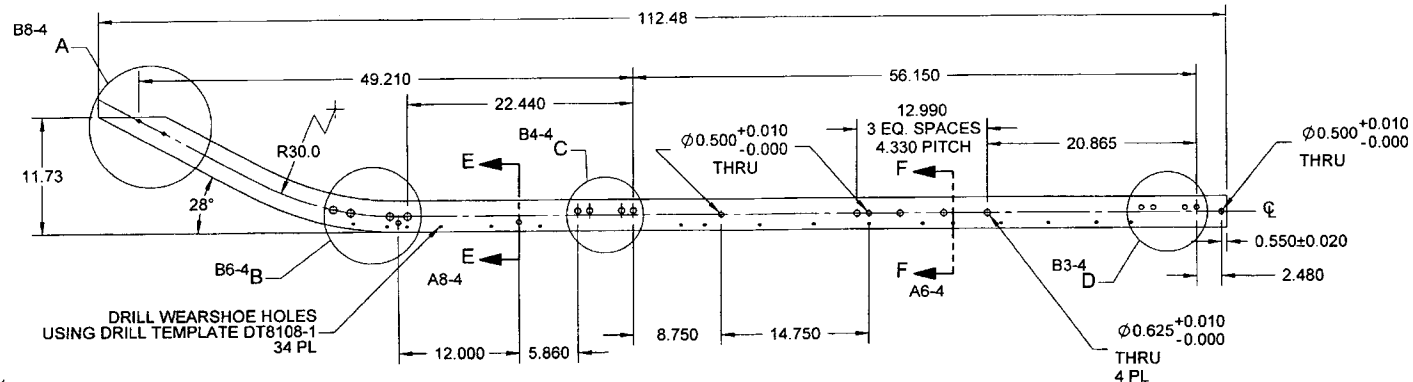
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

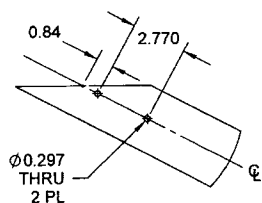
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

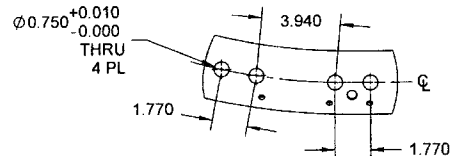
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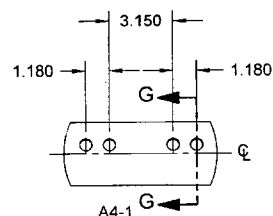
D2750-1 LH SKIDTUBE



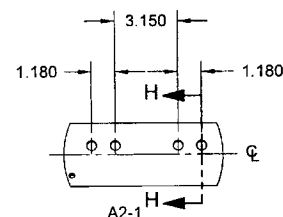
DETAIL A
SCALE 2X



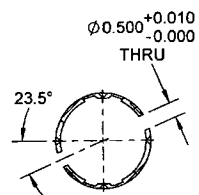
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SCALE 2X



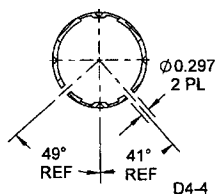
DETAIL C
SCALE 2X



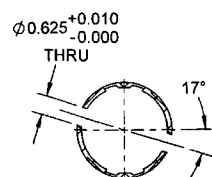
DETAIL D
SCALE 2X



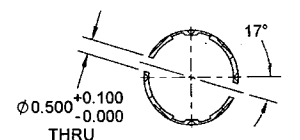
SECTION E-E
SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

w/069709

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DESIGN	IPN	DART AEROSPACE USA, INC.	
DRAWN	IPN	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 4 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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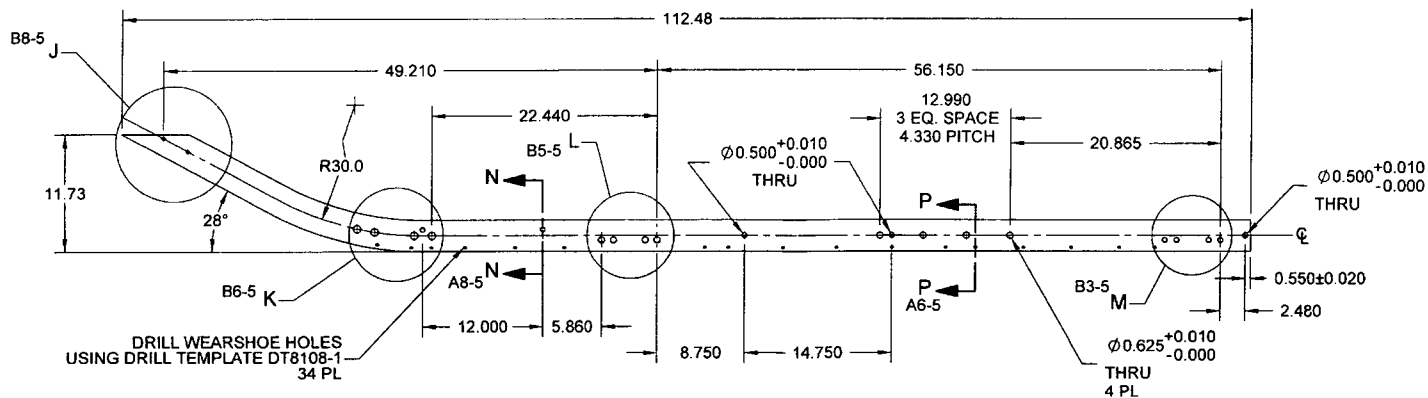
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

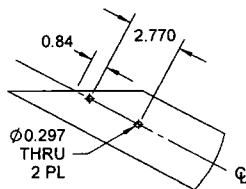
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

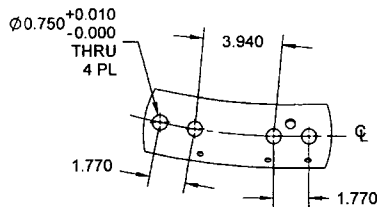
NOTE: Date & initial all entries



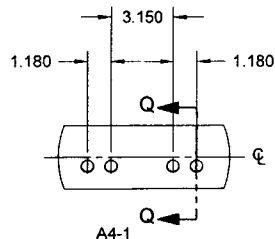
D2750-2 RH SKIDTUBE



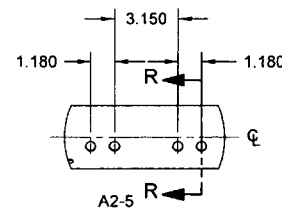
DETAIL J
SCALE 2X



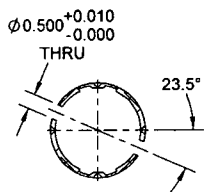
DETAIL K
SCALE 2X



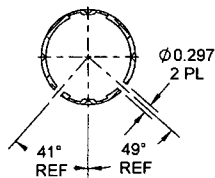
DETAIL L
SCALE 2X



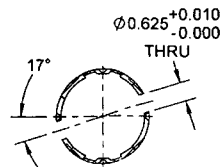
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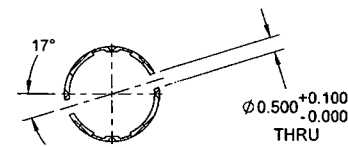
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

u1069709

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DESIGN	REV	DART AEROSPACE USA, INC.	
DRAWN	REV	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 5 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	
DATE	08.07.16	NTS	
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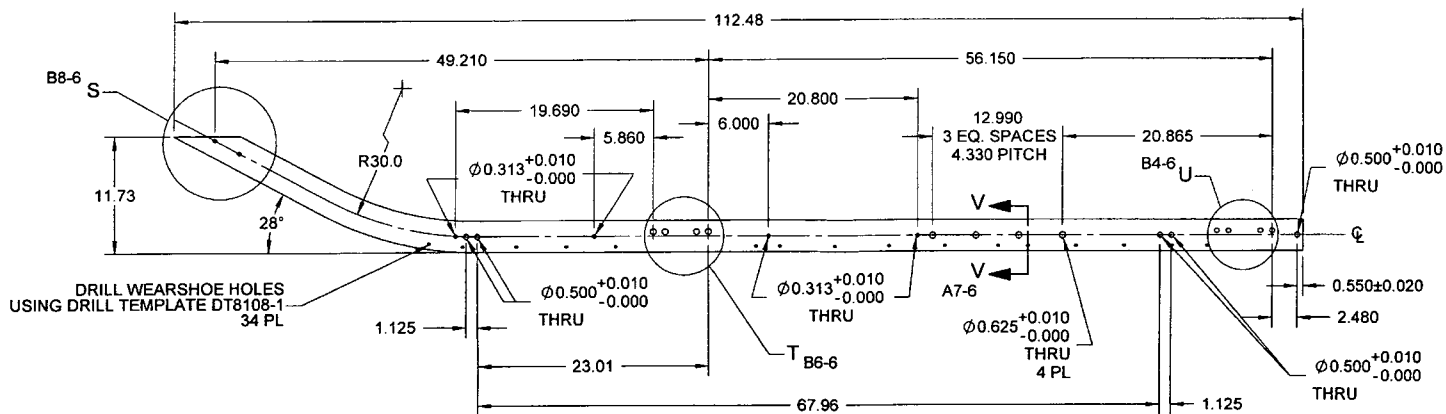
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

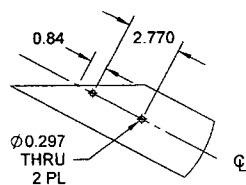
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

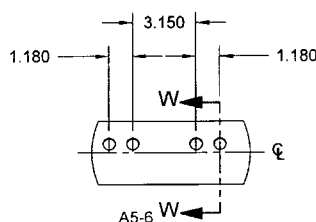
NOTE: Date & initial all entries



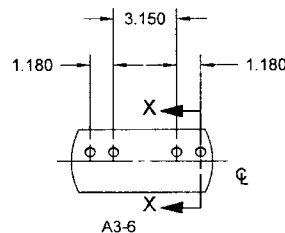
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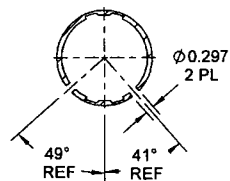
DETAIL S
SCALE 2X



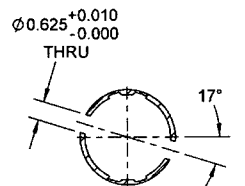
DETAIL T
SCALE 2X



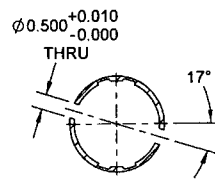
DETAIL U
SCALE 2X



SECTION V-V
SCALE 3X, 17 PL



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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DESIGN		DART AEROSPACE USA, INC.	
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CHECKED		DRAWING NO. D2750	REV. F
MFG. APPR.			SHEET 6 OF 11
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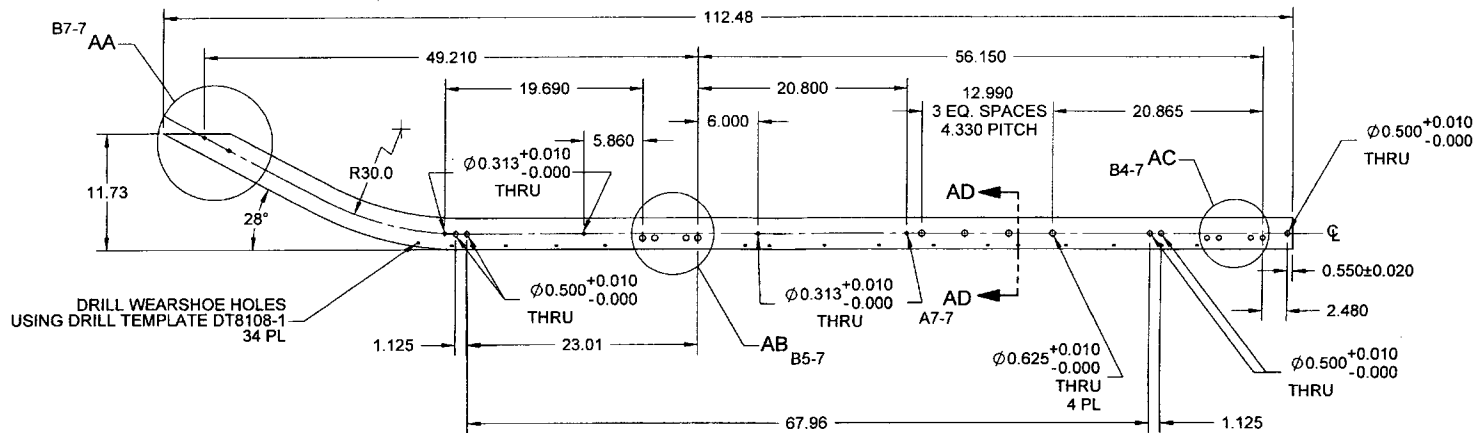
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

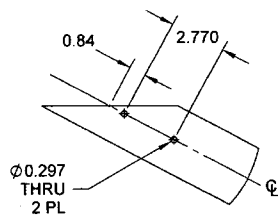
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

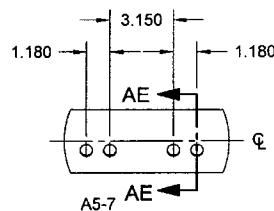
NOTE: Date & initial all entries



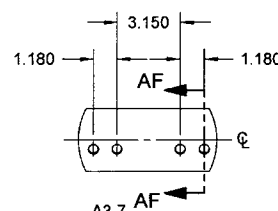
D2750-4 RH SKIDTUBE



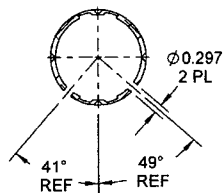
DETAIL AA
SCALE 2X



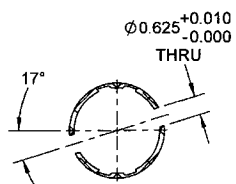
DETAIL AB
SCALE 2X



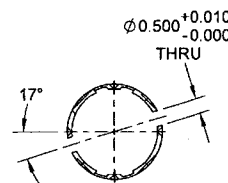
DETAIL AC
SCALE 2X



SECTION AD-AD
SCALE 3X, 17 PL



SECTION AE-AE
SCALE 3X, 4 PL



SECTION AF-AF
SCALE 3X, 4 PL

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08-04-22

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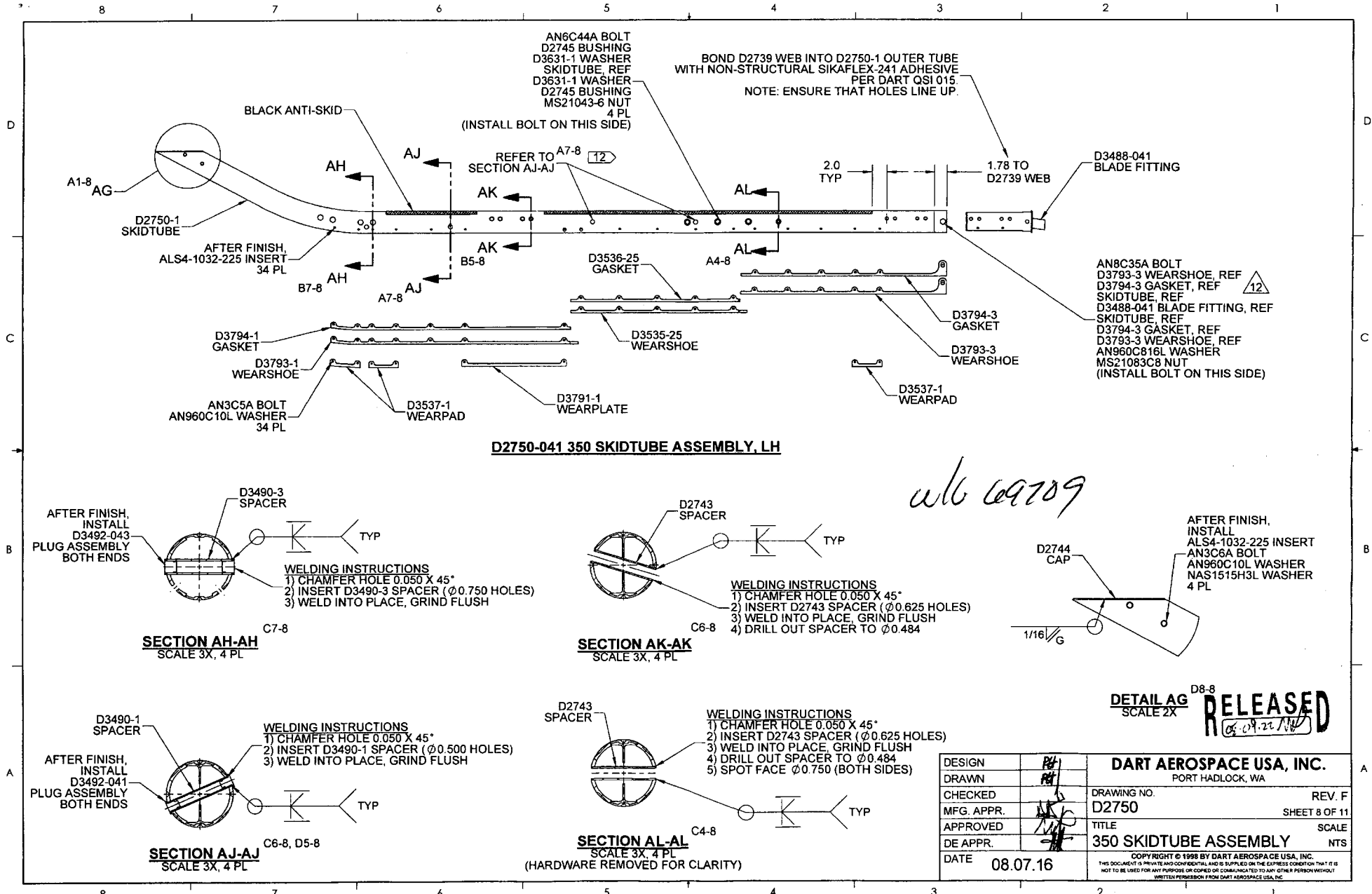
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	PA	DART AEROSPACE USA, INC.	
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

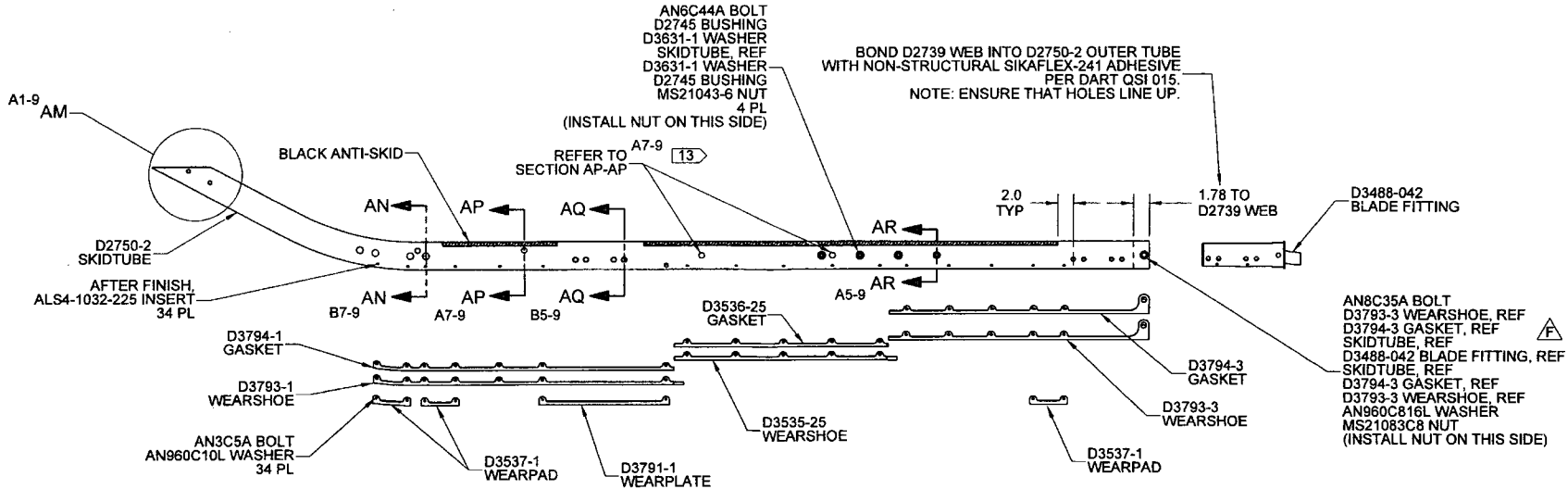
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

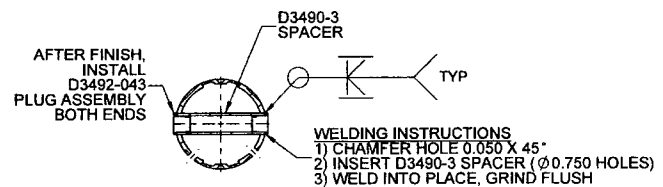
NOTE: Date & initial all entries

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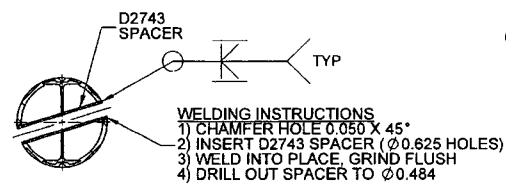


D2750-042 350 SKIDTUBE ASSEMBLY, RH

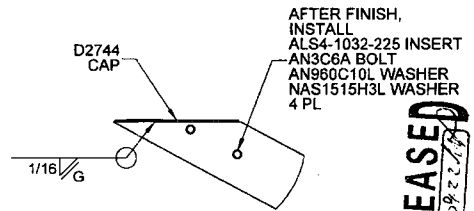
u/o 69709



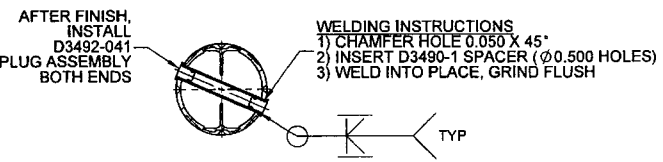
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SCALE 3X, 4 PL



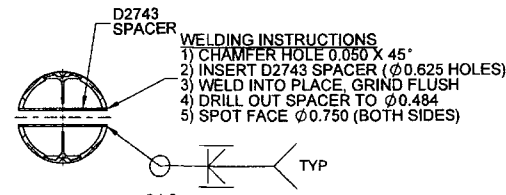
SECTION AQ-AQ
SCALE 3X, 4 PL



DETAIL AM
SCALE 2X



SECTION AP-AP
SCALE 3X, 4 PL



SECTION AR-AR
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)

DESIGN	PA	DART AEROSPACE USA, INC.	
DRAWN	PA	PORT HADLOCK, WA	
CHECKED	PA	DRAWING NO.	REV. F
MFG. APPR.	MD	D2750	SHEET 9 OF 11
APPROVED	MD	TITLE	SCALE
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08/22/08

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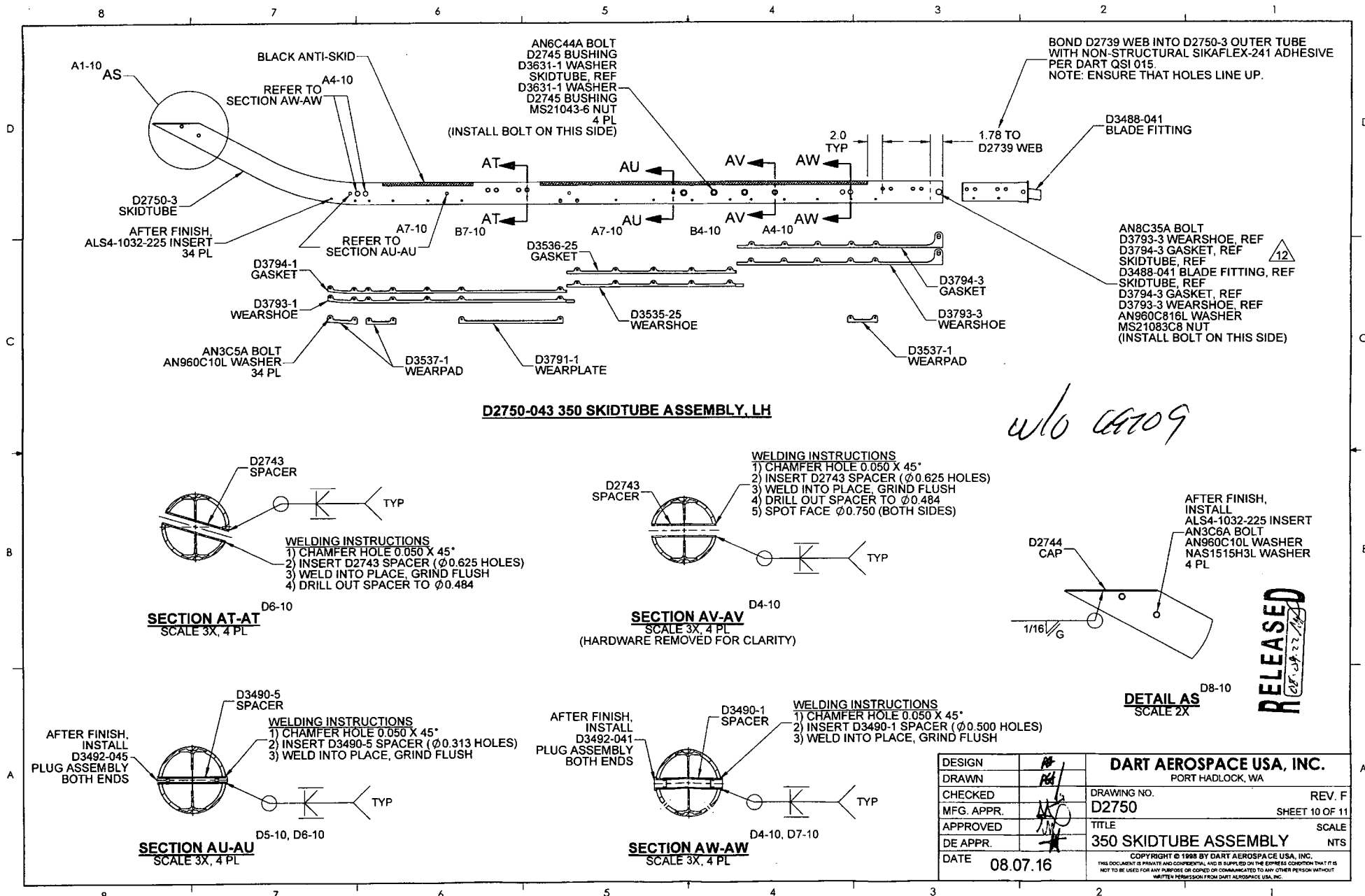
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

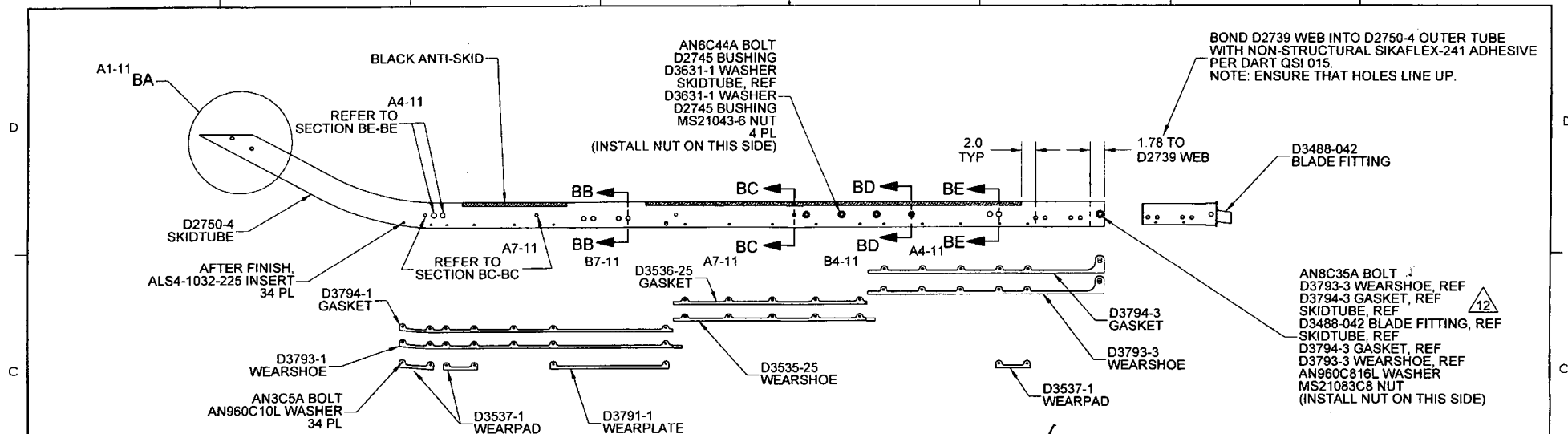
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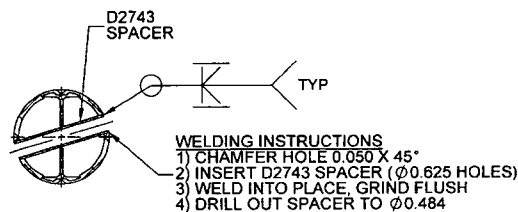
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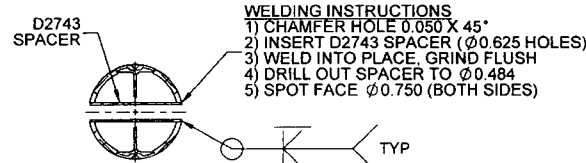
D2750-044 350 SKIDTUBE ASSEMBLY, RH

W/O 69709

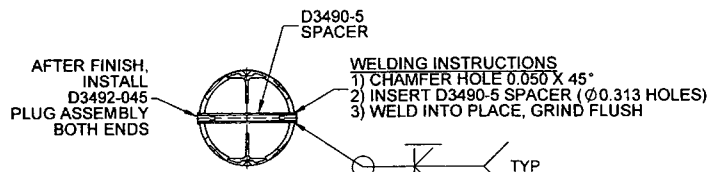
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08.07.16



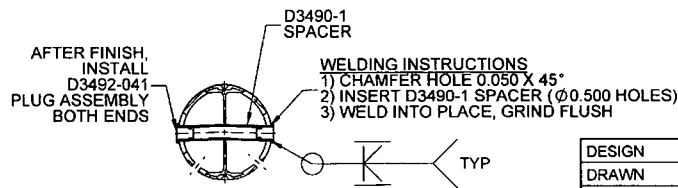
SECTION BB-BB
SCALE 3X, 4 PL



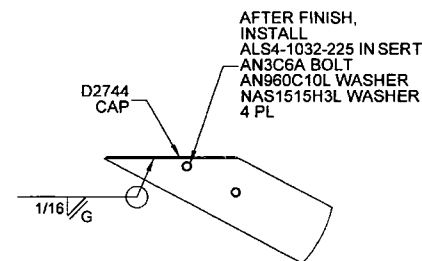
SECTION BD-BD
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)



SECTION BC-BC
SCALE 3X, 4 PL



SECTION BE-BE
SCALE 3X, 4 PL



DETAIL BA
SCALE 2X

DESIGN	HA	DART AEROSPACE USA, INC.	
DRAWN	HA	PORT HADLOCK, WA	
CHECKED	HA	DRAWING NO.	REV. F
MFG. APPR.	HA	D2750	SHEET 11 OF 11
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8 7 6 5 4 3 2 1

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 254

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: 69872
Part number: 350 636 011
Description: 350
Welding Process: Tig ☒ Mig ☐
Base material: aluminum
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier Pat Lewis Date of Test Coupon 11.06.08

Welder Barclay Elliot Date of Test Coupon 11/06/08

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

W/O: <input type="checkbox"/>		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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